

CAPTIVE PROPELLED MODEL

BACKGROUND

Sculptor Alexander Calder is often credited with creating a popular series of animated and non-animated models, some of which include the suspended moving
5 sculpture (also called a “mobile”), a suspended stationary sculpture (or “stabile”), and a hybrid of the mobile and stabile concepts (sometimes referred to as a “standing mobile”).

Except for differences in their means of suspension, these models are fundamentally similar in that they employ various pieces of artful expression,
10 interconnected by a series of wires or thin rods. For example, a mobile has moving parts, responsive to incidental forces such as the wind, and is generally designed to hang from a rod connected to a ceiling. The parts of a stabile are usually immobile, but the device has a dynamic, three-dimensional form that suggests kinetic potential and compels physical motion from the viewer, who must circulate around the work to
15 view it. A standing mobile generally combines a fixed base and a plurality of display members freely hanging from a balancing member.

To date, however, none of these devices has been functionally coupled with a reliable means of propulsion (for example, a propeller powered by an electromechanical, photoelectric or magnetic power supply) for propelling a captive
20 model about a central rotational axis established by a free-standing pivoting pin disposed within a length of the balancing member even in the absence of incidental forces.

For example, U.S. Patent No. 2,074,878 to Weber discloses a stationary support means having an arm member bolted to a shaft, wherein one end of the arm comprises
25 a toy plane and the other end comprises a counterweight; however, no reliable means

of propelling the plane about an axis established by rotation about a free standing pivoting pin disposed within a horizontal length of a balancing member is disclosed. Similarly, U.S. Patent No. 2,676,014 to Smith discloses a hinged and latched means for rotatably supporting an arm bearing a captive figurine; but again, no means for
5 propelling the device about a rotational axis established by a pivoting pin disposed within the length of a balancing member is disclosed. In short, a need exists to provide a captive model with a simple and reliable means for propelling the device about an axis established by rotation around a free standing pivoting pin disposed within the length of a balancing member.

10

BRIEF SUMMARY OF THE INVENTION

A captive propelled model is provided comprising a balancing member having a first end and a second end, wherein the balancing member rotates around a free standing pivoting pin disposed between the first end and the second end; at least one
15 model or figurine attached to the first end of the balancing member, wherein the figurine has at least one actuatable member operating in electrical communication with an actuator; a power source in electrical communication with the actuator; and a counterweight attached to the second end of the balancing member. Also provided is a remote controlled captive propelled model that further comprises a remote control
20 receiver and a control transmitter for controlling actuation of the actuatable member.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a depiction of a captive propelled model according to one aspect of the present invention.

Figure 2 is a depiction of a captive propelled model according to a further embodiment of the invention.

DETAILED DESCRIPTION

5 With reference now to a specific, non-limiting embodiment of the invention depicted in Figure 1, a captive propelled model is shown comprising a base or platform member 1; a vertical support member 2 structurally affixed to said base or platform member 1; a power source 3 disposed within a body portion of said base or platform member 1; a positive wiring connection 4 attached to a positive output of
10 said power source 3 and arranged so as to be enclosed within a body portion of said vertical support member 2; a negative or ground wiring connection 5 attached to a negative output of said power source 3 and arranged so as to be enclosed within a body portion of said vertical support member 2; a grounding terminus 6 disposed in communication with a conductive surface 14 so as to receive said negative or ground
15 wiring connection 5 and to effectively establish an electrical ground for the device's power circuit; a receiving member 7 for receiving current transmitted by said power source 3 along said positive or hot wiring connection 4, and for establishing a seat or receiving point for receiving a free standing pivoting pin 8 disposed in communication with a balancing member 9; at least one figurine or other model 10
20 that has been formed either structurally integral with or mechanically attached to one end of said balancing member 9; a propeller or other propulsive means 11 affixed to said figurine 10; a counterweight 12 disposed on an opposite end of the balancing member from which figurine 10 is disposed; and a drag line 13 disposed in communication with both said balancing member 9 and said conductive surface 14 to
25 so as to effectively establish an electrical ground for the device's power circuit.

While the device shown in Figure 1 discloses a presently preferred embodiment of the captive propelled model disclosed herein, those of ordinary skill in the appropriate arts will appreciate that many other variations of the invention described above could be employed without departing from the scope or spirit of the present invention. For example, while the embodiment of Figure 1 shows what is essentially a standing mobile as modified by the propulsive means and pivoting pin of the present invention, the configuration could easily be reworked to comprise a hanging mobile, so long as a receiving member 7 is provided to receive a free standing pivoting pin 8 which supports the balancing member 8 balanced thereupon.

10 In other alternative embodiments, balancing member 9 is a solid metallic member, which itself carries current to the figurine 10 and/or propeller 11; in further embodiments, balancing member 9 comprises a tube shaped member with wiring disposed within to power the figurine 10 and/or propeller 11. In still further embodiments of the invention, propeller 11 is driven by a small motor connected to
15 the power source by wiring, while in other embodiments, when the power circuit is activated, a light is turned on that shines toward a photoelectric plate disposed in electrical communication with the motor to power the propeller 11.

According to certain aspects of the invention, figurine 10 comprises an airplane having a propeller 11 disposed thereupon. In other embodiments, airplane figurine 10
20 has one or more additional actuable members, for example, movable wing flaps or a movable tail assembly, or a pilot having animated limbs, *etc.*

According to other embodiments of the invention, power source 3 further comprises a rechargeable power source, such as a rechargeable battery; in other embodiments, power source 3 comprises an electric motor or the like, or a plurality of
25 magnets of differing charges disposed so as to induce an electric field and thereby

lend current to the device's power circuit. In a further embodiment, power source 3 comprises a photoelectric plate that is responsive to either ambient or directed light in order to generate power. In yet another embodiment, power source 3 further comprises a rheostat.

5 According to further aspects of the invention, power source 3 operates in electrical communication with an operating switch 15, which is controlled manually by an operator. In certain embodiments of the invention, operating switch 15 is an electrical switch; in other embodiments, electrical switch 15 is a variable modulation electric switch, so that the operator selects from one of a plurality of speeds at which the
10 balancing member 9 is propelled about a rotational axis established by free standing pivoting pin 8. In still further embodiments, operating switch 15 contains a signal receiver, for example, a radio frequency signal receiver, and is operated remotely by an operator. In still further embodiments, power source 3 is powered by wiring that extends beyond the body of platform 1 and draws power from a wall socket by means
15 of a plug.

As seen in Figure 2, power source 3 may be replaced or supplemented with a further power source 34 contained within said counterweight 32, which is engaged by a signal receiver/transmitter apparatus 33, for example, a radio frequency signal receiver in electrical communication with a remote controller (not shown). In the
20 embodiment of Figure 2, dragline 35 can be eliminated to provide a sleeker and more simply operated embodiment of the device provided a ground connection is disposed within said counterweight 32. In such an embodiment, when an operator using a remote controller sends a control signal to signal receiver/transmitter apparatus 33, power source 34 is activated so as to send current along wiring disposed within a
25 body portion of balancing member 29, thereby activating propulsive means 31 so that

the figurine 30 is propelled about an axis established by rotation of the balancing member 29 about free standing pivoting pin 28.

In an alternative embodiment, the entire balancing member 29 is removed from the receiving member 28, thereby disengaging balancing member 29 completely from the vertical support member 22, so that it may be placed upon another, external receiving member (for example, a pencil eraser or a different model's base) and still rotate about an axis established by the disposition of pivoting pin 28, which permits animation of the device with a greater simplicity and freedom of movement than would otherwise be expected from a standing mobile.

Alternatively, power source 23 may be engaged by simply activating a switch 37 so that current is delivered along wiring connections disposed within a body portion of vertical support member 22. In this embodiment, dragline 35, which is in communication with metallic balancing member 29, is employed to make contact with conductive surface 36, which also serves as a terminus point 26 for negative or ground connection 25 to ground the device's power circuit.

As seen in the embodiment of the invention depicted in Figure 2, positive wiring connection 24 is disposed in electrical communication with metallic receiving member 27 and free standing pivoting pin 28, which is in turn disposed in electrical communication with a rechargeable power source 34 disposed within counterweight 32.

In further embodiments, a power source 34 and signal receiver/transmitter apparatus 33 are disposed in portions of the device other than within a body portion of the counterweight 32. For example, a power source and signal receiver/transmitter apparatus 33 can be disposed within a body portion of vertical support member 22,

within a body portion of base or platform 21, or within a body portion of balancing member 29.

The foregoing specification is provided for illustrative purposes only, and is not intended to describe all possible aspects of the present invention. Moreover, while the invention has been shown and described in detail with respect to several exemplary embodiments, those of ordinary skill in the pertinent arts will appreciate that minor changes to the description, and various other modifications, omissions and additions may also be made without departing from either the spirit or scope thereof.